UČNI NAČRT PREDMETA / COURSE SYLLABUS

Predmet:	**Metodologija pedagoškega raziskovanja**
Course title:	**Methodology of educational research**

Študijski program in stopnja Study programme and level	Študijska smer Study field	Letnik Academic year	Semester Semester
Predmetni učitelj / 1. in 2. stopnja **Subject teacher / 1. and 2. level**	**Izobraževalna tehnika** **Technical education**	**5.**	**9.**

Vrsta predmeta / Course type   Obvezni / Obligatory

Univerzitetna koda predmeta / University course code:

Predavanja Lectures	Seminar Seminar	Vaje Tutorial	Lab. vaje Laboratory work	Terenske vaje Field work	Samost. delo Individ. work	ECTS
15	30	15			90	5

Nosilec predmeta / Lecturer: Mateja Ploj Virtič

Jeziki /	Predavanja / Lectures:	slovenski / slovene
Languages:	Vaje / Tutorial:	slovenski / slovene

Pogoji za vključitev v delo oz. za opravljanje študijskih obveznosti:

Ni posebnih pogojev.

Prerequisits:

None.

Vsebina:

Predavanja:
- Uvod v pedagoško metodologijo.
- Raziskovanje v vzgojno-izobraževalnih organizacijah.
- Objektivnost, vrednote in etika v raziskovanju
- Vrste pedagoških raziskav: temeljne, aplikativne in razvojne raziskave
- Metode pedagoškega raziskovanja: deskriptivna, kavzalno eksperimentalna, kavzalno neeksperimentalna, eksplorativna.
- Kvalitativne in kvantitativne raziskave.

Content (Syllabus outline):

Lectures:
- An introduction to pedagogical methodology.
- Research in educational organisations.
- Objectivity, values and ethics in research
- Types of educational research: Fundamental, applied and developmental research
- Methods of educational research: descriptive, casually experimental, casually non-experimental, exploratory.
- Qualitative and quantitative research.

Seminarji:
- Načrtovanje individualne raziskave, raziskovalno vprašanje, postavljanje hipotez..
- Tehnike zbiranja podatkov in merske značilnosti instrumentov.,
- Vzorčenje
- Pojem in vrsta spremenljivk.
- Urejanje zbranih podatkov in statistični izračuni s primerno programsko opremo (npr. SPSS, Jamovi, AMOS…).
- Analiza in interpretiranje rezultatov
- Pisanje raziskovalnih nalog, zaključnega dela in drugih strokovnih besedil (struktura, slog, citiranje, navajanje literature).

Seminarske vaje:
- Seminarske vaje aplikativno dopolnjujejo vsebino predavanj in seminarjev z izvedbo samostojne raziskave.

Seminar:
- Individual research design, research question, hypothesis formation.
- Data collection techniques and measurement instrument characteristics.
- Sampling
- Concept and type of variables.
- Editing of collected data and statistical calculations using appropriate software (e.g. SPSS, Jamovi, AMOS…).
- Analysis and interpretation of results
- Writing research papers, thesis and other professional texts (structure, style, citation, references).

Seminar work:
- Seminar workshops complement the content of lectures and seminars in an applied way by carrying out independent research.

Temeljni literatura in viri / Readings:

- Cenčič, M., Čagran, B., Ivanuš Grmek, M. (2009). Kako poteka pedagoško raziskovanje : primer kvantitativne empirične neeksperimentalne raziskave, Zavod RS za šolstvo
- Sagadin, J. (2003). Statistične metode za pedagoge, Obzorja
- Cenčič, M. (2009). Kako poteka pedagoško raziskovanje. Primer kvantitativne empirične neeksperimentalne raziskave, Zavod RS za šolstvo
- Kožuh, B. (2016). Knjiga o statistiki, Univerza v Ljubljani, Filozofska fakulteta
- Field, A. (2013). Discovering statistics using IMB SPSS statistics, Sage

Cilji in kompetence:

Cilji, ki jih bodo študenti dosegli pri predmetu, so naslednji:
1. Študenti bodo spoznali in razumeli osnovne koncepte in načela pedagoške metodologije, kot so raziskovanje v vzgojno-izobraževalnih organizacijah, objektivnost, vrednote in etika v raziskovanju ter vrste pedagoških raziskav (temeljne, aplikativne in razvojne raziskave),
2. Študenti bodo analizirali, ocenjevali in uporabljali različne metode pedagoškega raziskovanja, kot so deskriptivna, kavzalno eksperimentalna, kavzalno

Objectives and competences:

The objectives that students will achieve in the course are:
1. Students will learn and understand the basic concepts and principles of educational methodology, such as research in educational organisations, objectivity, values and ethics in research, and types of educational research (basic, applied and developmental research),
2. Students will analyse, evaluate and apply different methods of educational research such as descriptive, causal experimental, causal non-experimental and exploratory research, and

neeksperimentalna in eksplorativna raziskava, ter razumeli prednosti in omejitve kvalitativnih in kvantitativnih raziskav,

3. Študenti bodo načrtovali in izvajali individualno raziskavo, vključno z oblikovanjem raziskovalnega vprašanja, postavljanjem hipotez, izbiro primerne tehnike zbiranja podatkov, vzorčenjem in urejanjem zbranih podatkov z uporabo primerne programske opreme, kot so npr. SPSS, Jamovi, AMOS itd.,

4. Študenti bodo analizirali in interpretirali rezultate pedagoške raziskave ter jih kritično ovrednotili v skladu z etičnimi načeli raziskovanja,

5. Študenti bodo načrtovali in pisali raziskovalne naloge, zaključna dela in druge strokovne besedilne dokumente v skladu s pravili glede strukture, sloga, citiranja in navajanja literature,

6. Študenti bodo razvijali kritično razmišljanje in analitične sposobnosti pri obravnavi raziskovalnih problemov ter vrednotili zanesljivost in relevantnost virov podatkov,

7. Študenti bodo spoznali pomen in uporabnost pedagoškega raziskovanja kot temelja za pripravo magistrske naloge ter razvili spretnosti za načrtovanje in izvajanje lastne magistrske raziskave

Celostno gledano bodo študenti pri predmetu razvijali širok spekter kompetenc, ki jim bodo omogočile uspešno izvajanje pedagoškega raziskovanja, samostojno in odgovorno delovanje ter profesionalni razvoj v svoji poklicni karieri.
Študenti bodo pri predmetu razvijali naslednje kompetence:

1. Raziskovalna kompetenca: Študenti se bodo naučili osnovnih principov in postopkov raziskovanja v vzgojno-izobraževalnih organizacijah. Razvili bodo sposobnost načrtovanja in

understand the strengths and limitations of qualitative and quantitative research,

3. Students will design and conduct individual research, including formulating a research question, setting hypotheses, selecting an appropriate data collection technique, sampling and editing the collected data using appropriate software such as SPSS, Jamovi, AMOS, etc.,

4. Students will analyse and interpret the results of the pedagogical research and critically evaluate them in accordance with the ethical principles of research,

5. Students will plan and write research papers, theses and other professional text documents in accordance with the rules of structure, style, citation and referencing,

6. Students will develop critical thinking and analytical skills in addressing research problems and evaluate the reliability and relevance of data sources,

7. Students will learn the importance and usefulness of pedagogical research as a foundation for the preparation of a Master's thesis and develop the skills to plan and carry out their own Master's research.

Taken as a whole, students will develop a wide range of competences that will enable them to carry out successful pedagogical research, to act independently and responsibly, and to develop professionally in their professional careers. Students will develop the following competences:

1. Research competence: students will learn the basic principles and procedures of research in educational organisations. They will develop the ability to plan and conduct research, to pose research questions and hypotheses, and to select appropriate research methodology.

2. Analytical competence: Students will learn to use a variety of methods to

izvedbe raziskave, postavljanja raziskovalnih vprašanj in hipotez ter izbire primerne metodologije raziskave.

2. Analitična kompetenca: Študenti se bodo naučili uporabljati različne metode za zbiranje, urejanje in analizo podatkov, tako kvalitativnih kot kvantitativnih. Razvili bodo sposobnost interpretiranja rezultatov raziskave ter uporabe statistične programske opreme, kot je SPSS, Jamovi, AMOS, za analizo podatkov.

3. Kritična kompetenca: Študenti bodo razvili kritično razmišljanje in vrednotenje raziskovalnih študij ter njihovih rezultatov. Naučili se bodo ovrednotiti zanesljivost in veljavnost raziskovalnih metod ter prepoznavati morebitne pristranskosti in omejitve raziskav.

4. Komunikacijska kompetenca: Študenti se bodo naučili pisati raziskovalna besedila, vključno s strukturo, slogom, citiranjem in navajanjem literature. Razvili bodo sposobnost jasne in učinkovite komunikacije rezultatov raziskave ter predstavitve svojih ugotovitev in argumentacije pred kolegi in strokovno javnostjo.

5. Samostojna delovna kompetenca: Študenti bodo razvili sposobnost samostojnega načrtovanja, izvajanja in vrednotenja raziskovalnih dejavnosti. Naučili se bodo upravljati s časom in viri ter samostojno reševati raziskovalne probleme.

6. Etika in profesionalna kompetenca: Študenti bodo spoznali etične vidike pedagoškega raziskovanja, vključno z objektivnostjo, vrednotami, etičnimi smernicami ter zavedanjem odgovornosti do udeležencev raziskave in strokovne javnosti. Razvili bodo tudi profesionalno usmerjenost in zavedanje pomena raziskovalnega dela v njihovi prihodnji pedagoški praksi.

Z zgoraj navedenimi kompetencami bodo

collect, organise and analyse data, both qualitative and quantitative. They will develop the ability to interpret research results and to use statistical software such as SPSS, Jamovi, AMOS to analyse data.

3. Critical competence: Students will develop critical thinking and evaluation of research studies and their results. They will learn to evaluate the reliability and validity of research methods and to identify potential biases and limitations of research.

4. Communication competence: Students will learn to write research texts, including structure, style, citation and referencing. They will develop the ability to communicate research findings clearly and effectively and to present their findings and arguments to peers and professional audiences.

5. Independent working competence: Students will develop the ability to plan, conduct and evaluate research activities independently. They will learn to manage time and resources and to solve research problems independently.

6. Ethics and professional competence: Students will learn about the ethical aspects of educational research, including objectivity, values, ethical guidelines and awareness of responsibility towards research participants and the professional public. They will also develop a professional orientation and awareness of the importance of research in their future teaching practice.

With the above competences, students will acquire the necessary knowledge and skills for research work and will be able to independently monitor and evaluate their teaching practice and prepare their Master's thesis in a professionally and methodologically sound manner.

študenti pridobili potrebna znanja in spretnosti za raziskovalno delo ter bodo lahko samostojno spremljali in evalvirali svojo pedagoško prakso ter pripravili magistrsko nalogo na strokovno in metodološko utemeljen način.

Poleg tega bodo razvili tudi splošne kompetence, kot so kritično razmišljanje, analitično razmišljanje, timsko delo, komunikacijske veščine, upravljanje s časom in etično ravnanje, ki so pomembne za njihov celotni poklicni razvoj.

Poleg zgoraj naštetih kompetenc, ki so neposredno povezane s pedagoškim raziskovanjem, bodo študenti pri predmetu razvijali tudi druge ključne kompetence, ki so pomembne za uspešno delovanje v sodobni družbi, kot so informacijska pismenost, kritično vrednotenje virov, inovativnost in kreativnost ter reševanje kompleksnih problemov.

In addition, they will develop general competences such as critical thinking, analytical reasoning, teamwork, communication skills, time management and ethical behaviour, which are important for their overall professional development.

In addition to the above competences directly related to educational research, the course will also develop other key competences that are important for successful functioning in modern society, such as information literacy, critical evaluation of resources, innovation and creativity, and complex problem-solving.

Predvideni študijski rezultati:

Intended learning outcomes:

Znanje in razumevanje:
Predvideni študijski rezultati za znanje in razumevanje poudarjajo razumevanje osnovnih konceptov, načel, vrst in metod pedagoškega raziskovanja, ter uporabo teh znanj v praksi pri načrtovanju, izvajanju in evalvaciji pedagoških raziskav ter pri pisanju raziskovalnih nalog in drugih strokovnih besedil.
Po zaključku tega predmeta bodo študenti sposobni:
- Pokazati znanje in razumevanje osnovnih konceptov in načel metodologije pedagoškega raziskovanja,
- Reševati in analizirati rezultate pedagoške raziskave ter jih uporabiti pri evalvaciji raziskovalnih ugotovitev.

Knowledge and understanding:
The intended learning outcomes for knowledge and understanding emphasise an understanding of the basic concepts, principles, types and methods of educational research, and the application of this knowledge in practice in planning, conducting and evaluating educational research and in writing research papers and other professional texts.
Upon completion of this course, students will be able to:
- Demonstrate knowledge and understanding of the basic concepts and principles of educational research methodology,
- Solve and analyse the results of pedagogical research and apply them in the evaluation of research findings.

Prenesljive/ključne spretnosti in drugi atributi:	Transferable/Key Skills and other attributes:
1. Kritično razmišljanje: Študenti bodo razvijali sposobnost kritičnega razmišljanja pri ocenjevanju raziskovalnih vprašanj, postavljanju hipotez, analiziranju podatkov ter interpretiranju rezultatov raziskave.	1. Critical thinking: students will develop critical thinking skills in evaluating research questions, formulating hypotheses, analysing data and interpreting research results.
2. Reševanje problemov: Študenti bodo pridobivali spretnosti za prepoznavanje in reševanje raziskovalnih problemov ter pri iskanju ustrezne metodologije za obravnavanje specifičnih raziskovalnih vprašanj.	2. Problem solving: Students will acquire skills in identifying and solving research problems and in finding appropriate methodologies to address specific research questions.
3. Komunikacija: Študenti bodo razvijali komunikacijske spretnosti pri pisanju raziskovalnih nalog in drugih strokovnih besedil, ter pri predstavitvi in interpretaciji raziskovalnih rezultatov.	3. Communication: Students will develop communication skills in writing research papers and other professional texts, and in presenting and interpreting research results.
4. Timsko delo: Študenti bodo pridobivali izkušnje pri sodelovanju v skupinskih raziskovalnih projektih, kar bo razvijalo spretnosti timsko delo, vključno s komunikacijo, koordinacijo in deljenjem nalog med člani skupine.	4. Teamwork: Students will gain experience in participating in group research projects, which will develop teamwork skills, including communication, coordination and sharing of tasks among team members.
5. Raziskovalne spretnosti: Študenti bodo pridobivali spretnosti za načrtovanje, izvajanje in evalvacijo pedagoških raziskav, vključno z zbiranjem, urejanjem in analiziranjem podatkov, kar bo razvijalo njihove raziskovalne spretnosti in sposobnost uporabe različnih raziskovalnih metod.	5. Research skills: Students will acquire skills in designing, conducting and evaluating educational research, including collecting, organizing and analysing data, which will develop their research skills and their ability to use a variety of research methods.
6. Uporaba informacijsko-komunikacijske tehnologije (IKT): Študenti bodo pridobivali izkušnje pri uporabi IKT pri zbiranju in analiziranju podatkov, ter pri pisanju raziskovalnih nalog, kar bo razvijalo njihove spretnosti uporabe sodobnih tehnologij v pedagoškem raziskovanju.	6. Use of Information and Communication Technology (ICT): Students will gain experience in the use of ICT in data collection and analysis, and in writing research papers, developing their skills in the use of modern technologies in educational research.
7. Kritična uporaba literature: Študenti bodo pridobivali spretnosti za kritično ocenjevanje literature ter za iskanje, izbor in uporabo relevantne literature pri načrtovanju, izvajanju in evalvaciji pedagoških raziskav.	7. Critical Use of Literature: Students will acquire skills in critically evaluating the literature and in finding, selecting and using relevant literature in planning, conducting and evaluating educational research.
	8. Ethics and Integrity in Research: Students will develop an awareness of the ethical aspects of educational research, including adherence to ethical

8. Etika in integriteta v raziskovanju: Študenti bodo razvijali zavedanje o etičnih vidikih pedagoškega raziskovanja, vključno z upoštevanjem etičnih načel in smernic pri zbiranju, analiziranju in interpretiranju podatkov ter pri pisanju raziskovalnih nalog.
9. Učinkovita komunikacija: Študenti bodo razvijali sposobnost učinkovite komunikacije, tako pisne kot ustne, pri predstavitvi in interpretaciji raziskovalnih rezultatov ter pri sodelovanju v skupinskih projektih, kar bo razvijalo njihove komunikacijske spretnosti in veščine.

Prenosljive spretnosti, ki jih bodo študenti pridobili, bodo uporabne ne le v akademskem okolju, ampak tudi v številnih profesionalnih in vsakdanjih situacijah, kar jim bo omogočalo uspešno vključevanje v različna poklicna področja in življenjske izzive.

principles and guidelines when collecting, analysing and interpreting data and writing research papers.
9. Effective communication: Students will develop the ability to communicate effectively, both orally and in writing, when presenting and interpreting research results and when participating in group projects, which will develop their communication skills.

The transferable skills that students will acquire will be useful not only in an academic environment, but also in a wide range of professional and everyday situations, enabling them to successfully integrate into different professional fields and life challenges.

Metode poučevanja in učenja:

Learning and teaching methods:

• Predavanja
• Seminarji
• Seminarske vaje

• Lectures
• Seminars
• Seminar work

Načini ocenjevanja:	Delež (v %) / Weight (in %)	**Assessment:**
• pisni individualni raziskovalni projekt	60 %	• written individual research project
• ustni zagovor (predstavitev raziskovalnega projekta)	40 %	• oral defence (presentation of the research project)

Reference nosilca / Lecturer's references:

1. PLOJ VIRTIČ, Mateja, DU PLESSIS, Andre, ŠORGO, Andrej. Development and validation of the "Mentoring for effective teaching practicum instrument". *CEPS journal : Center for Educational Policy Studies Journal*. 2022, str. 1-28. ISSN 1855-9719. DOI: 10.26529/cepsj.1315.
2. PLOJ VIRTIČ, Mateja. Teaching science & technology : components of scientific literacy and insight into the steps of research. *International journal of science education*. 2022, vol. 44, no. 12, str. 1916-1931. ISSN 0950-0693. DOI: 10.1080/09500693.2022.2105414.
3. PLOJ VIRTIČ, Mateja. Analiza dejavnikov, ki vplivajo na zadovoljstvo študentov Univerze v Mariboru z mentorji na strnjeni pedagoški praksi = Analysis of the factors, affecting satisfaction of students of the University of Maribor with mentors on pedagogical practicum. V: AVSEC, Stanislav (ur.). *Prispevki k optimizaciji učinkovitosti tehniškega izobraževanja*. Ljubljana: Pedagoška fakulteta, 2020. Str. 127-140, graf. prikazi. ISBN 978-961-253-259-8. http://pefprints.pef.uni-lj.si/6238/.
4. BORŠIĆ, Sabina, PLOJ VIRTIČ, Mateja. Vpliv ustvarjalnosti devetošolcev na izbiro tehniških poklicev. V: PLOJ VIRTIČ, Mateja (ur.). *Vloga predmetnega učitelja v sodobni šoli*. 1. izd. Maribor: Univerza v Mariboru, Univerzitetna založba, 2023. Str. 45-68, tabele, graf. prikazi. ISBN 978-961-286-701-0. https://press.um.si/index.php/ump/catalog/book/749, DOI: 10.18690/um.fnm.1.2023.2.